

Amendments to the Specification:

Please replace the specification currently on file with the following amended specification. A clean copy of the amended specification is attached hereto as Appendix A.

ABSTRACTTITLE: PRECISE LOCATION DATA PROVIDER

This

FIELD OF THE INVENTION

[0001] The present invention relates to ~~a novel method~~ the field of providing precise location data of ~~a for~~ a 911 call ~~placed by a cellular telephone. More particularly, this invention relates to combining transmitting circuitry in the cellular telephone calls made from cell phones and receiving circuitry in the~~ from ~~landline telephone. When a 911 cellular telephone call is placed within proximity of a telephone~~ connected to a PBX-type master switching box. More specifically, the present invention provides a method and apparatus to provide a landline telephone i.e. telephone subscriber's ID proximate to a cell phone user or office phone user to a 911 Operator upon the same house, apartment, office, business, school etc., an interaction takes place between the two enabled telephones. Upon receiving and decoding the RF transmission from the cell telephone initiated by dialing user initiating a 911 a pre dialer, connected to the landline transmits the 911 call. The result is the landline customers ID [address] data being immediately displayed on the 911 operators' screen. Note: Type of transmission is available: radio wave transmission including spread spectrum, infra red, Blue Tooth.

PROVISIONAL APPLICATION STATEMENT

~~This application claims the benefit of the filing date of Provisional Patent Application Number 60/274,207 Filing Date 03/09/2001 Title: 911 Celphinder call.~~

BACKGROUND OF INVENTION

[0002] ~~[0001]~~ When a 911 call is placed from a landline telephone, the address of the landline telephone is immediately displayed on the 911 operators' screen. ~~This action occurs although the caller has not verbally communicated with operator's or public safety answering point operator's screen which occurs without verbal communication from the 911 operator caller. When~~ However, when a 911 call is placed from a cellular telephone, the ~~callers'~~ caller's location does not show on the 911 operator's screen,

and unless verbal communication takes place between the 911 operator and the caller, the location source of the 911 call (and therefore, the caller) will remain unknown is not passed along to the 911 operator. In other cases, although the caller communicates is able to communicate with the 911 operator, but is 911 operator, the caller may be unable to provide the operator with the caller's current location data. Accordingly, all cell phones are at a disadvantage when contacting emergency 911 operators relative to contact from a landline telephone.

[0003] ~~{0002}~~ The Federal Communications Commission (FCC) in the United States has mandated that cell phone carriers must automatically provide the location of 911 calls {made from a cell phone} to public safety answering points to within certain accuracy parameters {i.e. (specifically, within 50 meters 67% of the time and within 100 meters 95% of the time)}. The deadline for implementation Failure to provide precise location data of the caller's location may place the caller's life in jeopardy, which is why the FCC has set high standards. For example, police officers responding to GPS or TDOA type location data might have to search dozens or even hundreds of apartments or offices before finding the precise location of this service was October 2001. the 911 caller since such technologies give a latitude/longitude reference to the 911 call, which may, depending on the terrain, building structure and signal attenuation, provide a reference point which may be several hundred feet from the location of the 911 call.

[0004] ~~{0003}~~ Several companies are responding to this challenge trying to satisfy the FCC requirement by using Global Positioning Signal (GPS) or Time Distance of Arrival (TDOA) between cell towers to provide location data. These technologies are achieving only limited success with their ability to in consistently provide providing accurate location data in urban areas— and in rural settings— sometimes missing the target actual caller's location by several hundred feet, especially. Companies using these technologies experience even less success accurately locating the caller when the caller is in a building where the cell phone's signal is shielded. This creates many difficulties as cell phones are deployed often used in residences, apartments and office towers, warehouses, factories and schools etc. Failure to provide precise location data of the scene of the emergency [call] could place the caller's life in jeopardy.

~~[0004]~~ OFFICE BUILDINGS AND TOWERS

[0005] ~~{0005}~~ When a 911 call is made from a {landline} office telephone in an office that is connected to the landline via a PBX type master switching box— then only the street address alone appears on the 911 operators operator's screen which also makes obtaining the caller's precise location challenging. {0006} For example, a 911 call placed from a landline on the 35th floor of a 50 floor an office

tower i.e. 3526 410 12th Ave. S.W. Anytown, would show on will only reveal the office tower address to the 911 operators screen as: 410 12th Ave. Anytown. The responding police officer would not know the operator. The 911 operator would only know that the call was placed from office No. 3526, unless the 35th floor (and specifically office no. 3526) if the caller completed the call by speaking spoke with the responding 911 operator.

[0006] ~~[0007] In~~ This presents difficulties as, in many cases—due to such as sudden illness, armed robbery or assault etc., the caller has can dialed dial 911, but is unable to speak with the 911 operator. Therefore, (or may not know or remember the individual office address or floor number does not show on the operator's screen). Lack The lack of precise location data could provided to the 911 operator in such a situation may put the caller's life in jeopardy.

[0008] WORK ALONE PERSONNEL [0009] Violence in the workplace Another example is an ongoing problem, especially for work personnel working alone. Such personnel. These workers would benefit from a safety technology that would allow them to surreptitiously contact, and provide police a 911 operator with their current location data. Being able to contact police without alerting the aggressor could be a valuable asset. In Since in many instances, an overt "call" for help could trigger a violent reaction from an actual or potential aggressor, being able to contact a 911 operator without alerting the actual or potential aggressor could be life saving.

[0007] Due to the difficulties associated with providing 911 operators with precise location data from cell phones and office phones in the circumstances described above, it is desirable to provide a system and method for providing more precise location data to a 911 operator without requiring the caller to verbally communicate location data with the 911 operator.

BRIEF SUMMARY OF THE INVENTION

[0008] It is an object of the present invention to overcome the disadvantages of the prior art by providing a system and method for consistently providing accurate location data to a 911 operator when a 911 call is made from a cell phone or a landline connected to a PBX type master switching box.

[0009] The present invention in various embodiments includes a transmitter and corresponding receiver (or a set of transceivers) and a pre-dialler connected to the receiver or one of the transceivers which is capable of transmitting a signal encoded with precise location data to a 911 operator.

[0010] ~~[0010] This~~ In one embodiment the present invention enables provides a 911 Call Center to automatically source the {operator with the precise address} of an incoming 911 call made from a cellular

telephone. ~~To accomplish this task~~ More specifically, 911 CELPHINDER shares the present invention provides a system and method for sharing the nearest telephone company subscribers' subscriber's ID-identification, already imbedded into subscribers' landline telephone system.

[0011] ~~The invention works by combining the appropriate circuitry transmitter/receiver, pre-dialer, and/or transceiver with both cell and landline telephone systems.~~ [0012] When a 911 with a 911 call to provide the 911 operator with the precise location of the 911 caller. That is, when a 911 phone call is made from an enabled cell phone within proximity of which is proximate to an enabled landline telephone i.e. same house landline telephone or an enabled phone jack, apartment, office, business, school etc. an interaction is initiated between the cell phone and the landline telephone, which ultimately provides the 911 operator with the subscriber identification for the landline telephone which provides precise location data.

[0013] ~~Originally designed to give precise location data inside problem buildings, i.e. office and apartment towers, 911 CELPHINDER will work in any~~

[0011] In a further embodiment, the present invention provides the precise location within cell phone range of a cell tower.

[0014] ~~911 CELPHINDER will also work where normal cell phone transmissions are blocked, out of range, or in areas not serviced by a cell phone network. Under these circumstances, it is necessary only for the cell phone to communicate with the 911 call placed by a landline telephone.~~

[0015] ~~The 911 CELPHINDER transmitter technology is attached to the cellular telephone either by an Interface Module or built in chipset. The landline telephone is equipped with receiving/pre dialing technology that communicates with the enabled cell phone. Alternatively, the landline telephone's circuitry is housed in, or attached to the telephone wall jack. Upon receiving and decoding the cell phone transmission initiated upon dialing 911 on the cell phone the landline receiving/monitoring technology triggers the pre dialer, and initiating a 911 call to the 911 operator. The landline subscribers' location address, data [imbedded on the landline] is immediately displayed on the operator's screen and is furnished to responding police officers. Any, of a number of other locating technologies for example GPS chip is added to the 911 CELPHINDER enabled cell phone. This further enhances the overall effectiveness of the System by furnishing location data when a 911 CELPHINDER enabled landline is unavailable.~~

~~{0016} 911 CELPHINDER enables responding police officers to go directly to the source of the emergency. Police officers responding to GPS or TDOA type location data might have to search dozens or even hundreds of apartments or offices before finding the 911 caller. 911 CELPHINDER is primarily designed to give the [address] of the emergency. Other technologies TDOA, GPS etc give a latitude/longitude reference to the 911 call. Depending on the terrain, building structure, signal attenuation etc. the reference point can be several hundred feet from the 911 call.~~

~~Office Buildings and Towers~~

~~{0017} 911 Celphinder Enabled Landline Telephone~~

~~{0018} In order to provide precise location data to landline telephones if office towers and other buildings using connected through a PBX type master switching boxes, the following technological changes are made.~~

~~{0019} A business line bypasses the PBX switch that terminates at the office junction type master switching box is installed. The business line contains the imbedded 911 location (address) data.~~

~~{0020} A 911 CELPHINDER monitoring and pre-dialing circuitry is installed at the junction box/phone jack. 911 CELPHINDERS transmitter circuitry is installed in the landline telephone.~~

~~{0021} When 911 is dialed, the 911 sequence triggers the transmitter in the landline telephone. The transmitted signal is received by the Systems monitor at the junction box/phone jack.~~

~~{0022} When a 911 call is placed on a 911 CELPHINDER enabled landline telephone, the 911 CELPHINDER transmission and reception sequence take place, activating the pre-dialer that initiates the 911 call, providing full address data to the 911 operator, enabling responding police officers to go directly to the source of the 911 call. A 911 call placed by a 911 CELPHINDER enabled cellular telephone from the same office will obtain the same result.~~

~~{0023} To protect work alone personnel, the worker wears a battery powered Triggering Key. When activated (by squeezing etc.) the Triggering Key transmits an (RF) signal. The signal is received by the 911 CELPHINDER cell phone that has a receiver/monitoring circuit added to the Interface Module (or built into the cell phone in a chipset format). The added circuit initiates the 911 dialing sequence, that in turn triggers and transmits the RF signal to the landline monitoring circuitry, that results in a 911 call (and subscribers data) being received by the 911 operator. Or the Triggering Key is coded with the same frequency used by the enabled cell phone, and communicates directly with the enabled landline~~

telephone, wall jack or junction box, initiating the pre-dialing sequence, using a similar system and method.

[0012] In still further embodiments, various arrangements, systems and methods for using the transmitter and corresponding receiver (or set of transceivers) and pre-dialler are taught.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] Embodiments of the present invention will now be described by way of example only, with reference to the attached Figures wherein:

[0014] {0024} FIG. 1 Showing is a schematic showing transmission from enabled cell phone to enabled landline telephone/ wall jack in accordance with the present invention.

[0015] {0025} FIG. 2 Showing is a schematic showing transmission (by transceiver) from cell phone to landline telephone/ wall jack in accordance with the present invention.

[0016] {0026} FIG. 2A Showing 2nd is a schematic showing a sequence of transmission (from an enabled wall jack/landline and line telephone to an enabled cell phone—the and then relayed to cell tower etc in accordance with the present invention.

[0017] {0027} FIG. 3 Showing is a schematic showing a converted landline telephone dialingdialling sequence (911) initiatesinitiating a transmission to an enabled junction box in accordance with the present invention.

[0018] {0028} FIG. 4 Showing is a schematic showing a lone worker activating Triggering Key. Transmission (same 911 CELPHINDER frequencya triggering key, the resulting transmission frequency)being received at enablean enabled wall jack or landline telephone in accordance with the present invention.

[0019] {0029} FIG. 5 Showing is a schematic showing a lone worker activating Triggering Keya triggering key, the resulting transmission being received by a cell phone and subsequently relayed to an enabled wall jack/landline line telephone in accordance with the present invention.

[0020] {0030} FIG. 6 Showing is a schematic showing a lone worker activating Triggering Key in a triggering key from an office (tower)building containing converted landlines (see No. 3 above); Transmissiona PBX-type master switching box and the transmission resulting from Triggering

Key activation of the triggering key being received by enabled junction box circuitry in accordance with the present invention.

[0021] FIG. 7 is a schematic showing a stand-alone unit in communication with a vehicle communication system in accordance with the invention.

[0022] FIG. 8 is a flow diagram showing a method for providing precise location information using the system provided in FIG. 1 in accordance with the present invention.

DETAILED DESCRIPTION OF INVENTION

[0031] Two methods are used to install the 911 CELPHINDER technology with cellular telephones. The first method adapts an existing cell phone to a 911 CELPHINDER enabled cell phone by attaching an Interface Module to the cell phone. The Interface Module contains circuitry that transmits an RF signal that is activated by dialing 911 on the enabled cell phone. The second method entails reducing the circuitry to a chipset. The chipset is then installed in the cell phone or Interface Module. Additionally, the Interface Module or chipset is either attached to, or build into a pager, PDA, or Triggering Key.

[0032] Two methods are used to install 911 CELPHINDER technology in a landline telephone. The circuitry that monitors and receives the transmission from the cell phone/Interface Module, and the pre dialing mechanism is housed in the landline telephone or telephone wall jack. This circuitry will also be reduced to chipsets. The Interface Module either uses its' own power source, or taps into the cells power source.

[0033] Existing Cell Phones

[0034] Most cellular telephones have a built-in interface connector that allows external communication with their internal functions. 911 CELPHINDER Interface Modules will interface with these cell phones. The Interface Module contains a transmitter, which is activated by dialing the 911 sequence and transmits a signal, which seeks out the nearest 911 CELPHINDER enabled landline telephone. The landline telephone contains a built-in receiver that monitors the cell phone transmissions' specific frequency. Upon receiving the cell phones' RF signal the 911 pre-dialer is triggered, placing the 911 call to the 911 call center. (The 911 transmission contains a signature tone advising the call center the 911 call was placed from a cell phone. A specific signature will identify the cell phone). The landline customers' I.D. and address data is immediately displayed on the 911 operators' screen. (ie cell phone call John Doe 1234

~~Main St. Down Town. The responding police officers are advised of the 911 cell phone status of the emergency call. In the event that more than one enabled landline responds to the 911 call, the operator can dismiss duplicate receptions (this can also be addressed by a software program installed in the 911 call center.~~

[0023] Generally, the present invention provides a system and method for providing accurate location data to a 911 operator when a 911 call is made from a cell phone or from a landline telephone which is connected to a PBX type master switching box.

[0024] In a general embodiment, the system 100 includes a transmitter 41 capable of broadcasting a triggering signal 2 for receipt by a corresponding receiver 43 (or, alternatively, a pair of transceivers or a suitable combination of transmitters, transceivers and receivers). The receiver 43, in turn, activates a predialler 50 which is capable of transmitting a second or call signal to a 911 operator where such second signal is encoded with identifying information which is convertible (or automatically converted) by a 911 operator into precise location data.

[0025] In one embodiment as shown in Figures 1 and 8, the system 100 provides a subscriber's identification from a landline telephone nearest to a cell phone making a 911 call. In this embodiment, the cell phone 1 has a transmitter 41 for transmitting a triggering signal 2 to the nearest landline telephone 3 or phone jack 4. The landline telephone 3 or phone jack 4 is equipped with a complementary receiver 43 for receiving the triggering signal 2 and the landline telephone 3 is further equipped with a pre-dialler 50. Predialler 50 is a device capable of completing a telephone call and in this embodiment is used for initiating a 911 call to a 911 operator. Upon receiving the triggering signal 2 from the cell phone 1 (which transmission is initiated upon a 911 call being initiated by the cell phone 1), the receiver 43 activates the predialler 50 which completes a 911 call. When the 911 operator receives the call from the predialler 50, the 911 operator is provided with the subscriber information for the landline telephone 3 which can be easily converted by the 911 operator (or is automatically converted for the 911 operator) into precise location data for the caller.

[0026] A worker skilled in the art will appreciate that receiver and predialler 50 may be installed and linked to the phone jack or installed in a phone jack or wall outlet box, thereby alleviating the need for a landline phone 3.

[0027] In this embodiment, the transmitter 41 is integrated with the cell phone 1 either by adding an interface module (not shown) to the cell phone 3 or building the transmitter 41 into the cell phone's

chipset. Further in this embodiment, the landline telephone's circuitry may integrate the receiver 43 and pre-dialler 50. A worker skilled in the art will appreciate that software installed on the cell phone circuitry may alleviate the need for a separate transmitter in the cell phone.

[0028] ~~{0035}~~ Another embodiment of the present invention, shown in Figures 2 and 2A, involves installing a first transceiver 91 in thea cell phone 1 or Interface Moduleinterface module (not shown) which is activated when the cell phonesphone user dials 911. The transmitted signal 2 is received by a second transceiver, contained10 in a nearby 911-CELPINDER-enables-landline telephone- 3. The landline-transceiver 10 is imprinted with the subscriber ID-ID in a signal 14 that is transmitted-[returned] and decoded by the cell phone/Interface Module's transceiver- 91. The subscriber data is then transmitted via signal 15 from the cell phone 1 to either the cell provider (or directly to the 911-call center) where it is switched to the 911-Call Center/Public Safety Answering Point-public safety answering point or directly to the public safety answering point for decoding to obtain precise location data of the cell phone user.

[0036] ~~————~~ Note:

[0029] ~~The subscriber ID data usually includes name and address. The sub's ID could be shown as theircell phone embodiments will work in any location within cell phone range of a cell tower and will also work where normal cell phone transmissions are blocked, out of range, or in areas not serviced by a cell phone network. Under these circumstances, it is necessary only for the cell phone 1 to transmit a signal 2 to an enabled landline telephone number, in which case the Call Center's computer will check the telephone number to determine the address etc.~~

Office Buildings and Towers

{0037} 911 Celphinder-Enabled Landline Telephone

[0038] ~~In order to provide precise location data to landline telephones in office towers and3.~~

[0030] In a similar embodiment as that shown in Figures 2 and 2A, the system could be used to locate lost or abducted children. More specifically, a transceiver 91 is sewn into a child's clothing or other buildings using PBX type master switching boxes, the following technological changes are made- apparel or in any other innocuous place where it would not be tampered with by the child and where it would avoid detection. Upon the child becoming lost or being abducted, a parent or guardian would initiate a signal to transceiver 91 from a transmitter (not shown). Transceiver 91, encoded with a unique identifier for the child, would in turn transmit a signal which would be received by the nearest enabled landline

telephone 3, phone jack 4 or cell phone 1 which would in turn initiate a 9-1-1 call providing precise location data which would enable rescuers to find the child.

[0031] ~~[0039] A business line~~In another embodiment shown in Figure 3, the present invention provides specific office location data from a landline telephone 3 within an office building to a 911 operator where otherwise the 911 operator would merely receive the particular office building's street address. More specifically, in this embodiment, a bypass circuit 78 is installed such that it bypasses the PBX switch that terminates type master switching box 79 and terminates directly at the officea junction box is installed. 18 for the office. The business line containsbypass circuit 78 includes the imbedded 911 location (address) data. A desk phone or other landline telephone 3 includes a transmitter 41 which communicates with a receiver 43 which may be installed at the office junction box 18. Upon a user dialling 9-1-1 from the landline telephone 3, the landline telephone 3 transmits a triggering signal 2 which is received by the receiver 43 at the junction box 18. This activates a pre-dialler 50 which in turn places a 9-1-1 call with the 911 location data through the bypass circuit 78. When the 911 operator receives the call from the pre-dialler 50, the 911 operator is provided with the 911 location data and is therefore provided with precise location data for the caller. The 911 operator will also receive a call processed through the PBX-type master switching box 79 but will be able to compare approximate address locations and the timestamps for the two calls to eliminate the redundant call received directly from the landline telephone 3 call being processed through the PBX-type master switching box 79.

[0040] ~~911 CELPHINDER monitoring and pre dialing circuitry is installed at the junction box/phone jack. 911 CELPHINDERS' transmitter circuitry is installed in the landline telephone.~~

[0041] ~~When a 911 call is placed on a 911 CELPHINDER enabled landline telephone, the 911 CELPHINDER transmission and reception sequence take place, activating the pre-dialer that initiates the 911 call, providing full address data to the 911 operator, enabling responding police officers to go directly to the source of the 911 call. A 911 call placed by a 911 CELPHINDER enabled cellular telephone from the same office will obtain the same result.~~

[0042] ~~Work Alone Personnel~~

[0043] ~~Another embodiment of the invention is designed for surreptitious use. For example, work alone personnel, especially female workers i.e. outside nurses, social service workers and real estate agent etc. will benefit from carrying a 911 CELPHINDER enables Triggering Key. The battery powered Triggering Key is designed to look like a commonly worn item i.e. watch, bracelet etc or worn beneath clothing. When activated (by squeezing etc) the Trigger Key transmits a signal (911 CELPHINDER~~

frequency) that is intercepted by the monitor/receiving circuitry of the enabled landline, wall jack, junction box or landline telephone. This in turn, triggers the pre-dialer, relaying the 911 call to the 911 call center, and providing the landline subscribers address. Another method relaying the Triggering Keys' transmission is to add a receiver to the enabled

[0032] In a further embodiment, a 9-1-1 call initiated by a cell phone. Upon receiving the Trigger Key's transmission, the receiving circuitry initiates the cell phones 911 dialing sequence. This approach can also be used by placing the receiving circuitry in the enabled 1 made from within an office building may have its signal 2 intercepted by a nearby landline telephone (office version) FIG

[0044] Another embodiment will reduce the circuitry contained 3 or phone jack 4 which is attached to a bypass circuit 78 and includes a transmitter 41 for communicating with a receiver 43 located in the Interface Module and office junction box 18. Accordingly, the landline telephone sets to a chipset. The chipsets accomplish the same functions outlined above and are built into the cell and telephone 3 would transmit a triggering signal 2 to the office junction box 18 which would, upon the receiver 43 triggering a pre-dialler 50 also located at the office junction box 18, complete a call to a 911 operator, such call including the specific office location of the landline telephones/wall jack/junction box.

[0045] Another embodiment uses Blue Tooth technology as part of 911 CELPHINDER'S circuitry. NOTE: The 911 CELPHINDER circuitry will not interfere with the normal function of either cell or landline telephone systems. Nor will it interfere with the usual transmission and reception of cell phone placed 911 calls.

[0046] Another telephone 3 and therefore providing the 911 operator with precise location data for the cell phone caller.

[0033] In a further embodiment of the invention is to add a GPS chip to the 911 CELPHINDER enabled, the present invention may be used by a lone worker 19 to surreptitiously make a 911 call through the use of a triggering key 20. The triggering key 20, which may look like any commonly worn item, includes a transmitter 41 for sending a triggering signal 2 to a cell phone 1 (Figure 5) or landline telephone 3 (Figure 4) or phone jack 4 (not shown) which is enabled with a transceiver 10 (in the case of a cell phone. This will further enhance the overall effectiveness of the System by finishing location data when a 911 CELPHINDER enabled landline is unavailable.

[0047] Another embodiment of the Technology entails installing a receiver 43 and predialler 50 (in the case of a landline telephone 3) to ultimately communicate precise location data to a 911

operator. Upon receiving the triggering key's signal, the cell phone interface/chipset with PDA's, pagers etc. phone 1 receives signal 2 and transmits signal 2 via transceiver 10 to the nearest receiver 43 for further handling. In the case of a landline telephone 3 or phone jack 4 receiving the signal from the triggering key 20, the receiver 43 activates pre-dialler 50 to place a 911 call complete with precise location data.

[0034] In a still further embodiment, shown in Figure 6, the triggering key 20 may communicate directly with a receiver 43 which would then cause a pre-dialler 50 to send the subscriber's identification information or the precise office location to a 911 operator.

[0035] A worker skilled in the art will appreciate that a lone worker 20 in the above embodiments may be a senior citizen, handicapped individual or someone otherwise unable to reach a phone in an emergency. This would allow such an individual to freely roam their home or other facilities enabled with receivers 43 and prediallers 50 without concern about carrying a cell phone or being proximate to a phone or other people if emergency assistance is required.

[0036] {0048} Another embodiment of the invention entails packaging a transceiver— 10 with imprinted/imbedded location data— in a small robust container, stand-alone unit 61. This stand -alone version of the 911 CELPHINDER technology unit 61 (hardwired or battery powered) can be placed anywhere, i.e. in various desirable locations such as underground parking, garages, elevators, etc, and other locations where placing a landline telephone or phone jack would be difficult or conspicuous or set-up in a city wide grid pattern—and to react to a cell phone 911 call in the same manner as the embodiments described in FIG above. 2. The container, stand-alone unit 61 could also be attached to a landline and carry the necessary imbedded location data and initiate a 911 call when the RF etc upon reception on a triggering signal is transmitted by the 2 from a cell phone, phone, triggering key or other device. This embodiment provides advantages of portability and alleviates the need to have an enabled landline telephone.

[0037] In a more specific embodiment shown in Figure 7, circuitry within a vehicle (such as those found in vehicle communication systems) would be capable of transmitting a triggering signal 2 to the stand-alone unit 61 having transceiver 10 such that the vehicle communication system having transceiver 91, which would normally be inoperative in a parkade or other covered area, would be able to communicate precise location data via signal 15.

[0038] In any of the above embodiments, and in the event that more than one enabled landline responds to the 9-1-1 call, the 911 operator can dismiss duplicate receptions by comparing location data

of various cells and the timestamps of various calls. This function could also be handled automatically by software designed for this purpose. Similarly, redundant regularly-received 9-1-1 calls such as call 5 from cell phone 1 shown in Figure 5 can be identified and ignored by the 911 operator.

[0039] In any of the above embodiments transmitting subscriber identification to the 911 operator, it should be noted that the subscriber identification may include the subscriber's name and address. Alternatively, the subscriber's identification could be shown as the subscribers telephone number, in which case the 911 operator will check the telephone number to determine the subscriber's name and address.

[0040] In any of the above embodiments, the present invention will not interfere with the normal function of either cell or landline telephone systems and will not interfere with the usual transmission and reception of cell phone placed 911 calls.

[0041] In any of the above embodiments using a cell phone, a worker skilled in the art will appreciate that a PDA with cellular capabilities, Blackberry™ or any other comparable handheld or portable device may replace the cell phone.

[0042] A worker skilled in the art will appreciate that the landline can be substituted with any mode of communication used to contact a 911 operator and should not be read to limit the present invention to conventional phone line use. Without limiting the generality of the above statement, the landline may include cable television, fibre optics, satellite, ADSL, electrical lines, voice-over-IP or other technology capable of transmitting an encoded signal to a 911 operator and may include intermediate steps such being directed through a number of servers, routers, switches or similar directing devices necessary to complete the communication to the 911 operator.

[0043] Likewise, the term "landline telephone" will be understood by one skilled in the art to include not just conventional switched telephone sets, but any transceiver for voice communications over landline, as noted above.

[0044] A worker skilled in the art will appreciate that the triggering signal 2 sent from any of the transmitters or transceivers to any of the corresponding receivers can be radio frequency (RF) based or other wireless signal such as Bluetooth™. In the case of a Bluetooth™ signal, the signal can be transmitted through connected Bluetooth™ devices to reach an enabled landline telephone or enabled phone jack, thereby extending the effective range of the Bluetooth™ signal.

[0045] A worker skilled in the art will appreciate that the system 100 can work in conjunction with and in parallel with prior art assisted GPS or TDOA systems. In particular, for rural, remote or open areas, a cell phone 1 may include a GPS chip to provide location data as an appropriate receiver 43 may not be available or proximate. This may prove to be especially useful in the embodiment described above with the lost or abducted child who may not be in the vicinity of a receiver 43.

[0046] A worker skilled in the art will appreciate that in any of the above embodiments, a transceiver could replace a transmitter or receiver.

[0047] A worker skilled in the art will appreciate that in countries outside of North America a different emergency code than 9-1-1 may be used. Accordingly, a worker skilled in the art will appreciate that all references to 9-1-1 may be replaced with another emergency code to account for regional, state or geographical differences.

[0048] The above-described embodiments of the present invention are intended to be examples only. Alterations, modifications and variations may be effected to the particular embodiments by those of skill in the art without departing from the scope of the invention, which is defined solely by the claims appended hereto.